KAZANSKII, B. A.

"1, 3-Dimethylcyclopentane." A. V. Koperina, L. M. Nazarova, and B. A. Kazanskii. (p. 1498)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1950, Vol 20, No 8.

CA

10

Addition of hydrogen to 1,3-dienes with the aid of calcium-ammonia. B. A. Kazanskiĭ and I. V. Gostunskaya. *Doklady Akad. Nauk S.S.S.R.* **71**, 295 (1950); cf. *C.A.* **32**, 2500[4]; **33**, 6233[1]. —1,3-Dienes add 2 H atoms at the moment of decompn. of $Ca(NH_3)_6$ (I), forming olefins. The reaction of isoprene (0.2 mol.) with 1 mol. I by the previously described technique yielded, after the usual purification, 70% $Me_2C:CHMe$ and about 8% $MeEtC:CH_2$. No $Me_2CHCH:CH_2$ was detected. Similar reaction with $(CH:CMe_2)_2$ gave 17–18% $(:CHCHMe_2)_2$ and 65–6% $Me_2C:CHCH_2CHMe_2$. The results are derived from the *n* and d. detns. of the various fractions obtained.

G. M. Kosolapoff

CA

A laboratory method for rapid hydrogenation of olefins at atmospheric pressure. B. A. Kazanskii, A. L. Liberman, A. F. Plate, M. I. Rozengart, and O. D. Sterligov. *Doklady Akad. Nauk S.S.S.R.* 71, 477-80(1950). Platinized C activated by a small amt. of $PdCl_2$ or H_2PtCl_6 is a very active, rapidly acting catalyst for atm.-pressure hydrogenation of olefins even without added solvents. A considerable economy in the amts. of catalysts needed is one of the results. Reductions of MeCCH:CHEt and octene were performed in a rocking flask with a 50–200 ml. charge and platinized charcoal contg. 0.01–0.05 g. Pt to which was added 1–2.85 ml. of the activator soln. (either 0.03 g. Pt/ml. of H_2PtCl_6, or 0.018 g. Pd/ml. of $PdCl_2$ soln.); the reduction was complete in 3–8 hrs. (usually 97°) and after filtration the products were distd.

G. M. Kosolapoff

/10

CA

Synthesis of 2-ethylbicyclo[2.2.2]octane and 2-propylbi-
cyclo[2.2.2]octane. B. A. Kazanskii and P. I. Zhuchen-
kova. *Doklady Akad. Nauk S.S.S.R.* 72, [illegible]
cyclohexadiene, b_{760} 80.5-80.0°, n_D^{20} 1.4[illegible], d_4^{20} 0.8[illegible]
g.), heated in a sealed tube with 28 g. acrolein [illegible] at 100
gave 80.8% 2,3-*endoethylene-1,2,5,6-tetrahydrobenzaldehyde*,
b_{15} 84.5°, n_D^{20} 1.4[illegible], d_4^{20} 1.0[illegible] (semicarbazone, m. [illegible]
[illegible] This treated with MeMgI in very dil. [illegible] soln.
gave 73% *methyl (2,5-endoethylene-1,2,5,6-tetrahydrophenyl)*
carbinol (I), b_{15} 109-10°, b_{20} 101-2°, n_D^{20} 1.5[illegible], d_4^{20} 0.[illegible],
treatment with H over Raney Ni at room temp. gave the
satd. alc., b_{8} 103-4°, b_{15} 108-9°, n_D^{20} 1.4[illegible], d_4^{20} 0.9[illegible],
which on oxidation with CrO_3 in AcOH at 70° gave the
corresponding *Me ketone*, $C_{10}H_{16}O$, b_{8} 94.5°, b_{15} 90-100°,
n_D^{20} 1.4882, d_4^{20} 0.9873 (*semicarbazone*, m. 190.7°). This
(12 g.), 10 ml. EtOH, and 5 g. $N_2H_4.H_2O$, refluxed 3.5
hrs., concd., and heated with 3 g. solid KOH and some
Pt-C gave *2-ethylbicyclo[2.2.2]octane*, b_{760} 168.9°, n_D^{20}
1.4720, d_4^{20} 0.8883. EtMgBr in the above synthesis gave
the *Et homolog* of I, 78%, b_{8} 90-100°, b_{15} 107.8°, n_D^{20} 1.5[illegible],
d_4^{20} 1.0012, hydrogenated over Raney Ni to the satd. alc.,
b_{15} 118°, n_D^{20} 1.4972, d_4^{20} 0.9[illegible], which yielded the corre-
sponding *Et ketone*, b_{15} 108.0°, d_4^{20} 0.9[illegible], n_D^{20} 1.4[illegible]
[*semicarbazone*, m. 188.5-9.0° (decompn.)]. The ketone
treated as above gave 53% *2-propylbicyclo[2.2.2]octane*,
b_{760} 175.5-6.5°, n_D^{20} 1.4742, d_4^{20} 0.8813. G. M. Kosolapoff

CA

10

Catalytic hydrogenation of cyclopentane under high hydrogen pressures. B. A. Kazanskiĭ and E. M. Terent'eva. *Doklady Akad. Nauk S.S.S.R.* 72, 511-13(1950). The hydrogenation was carried out in an autoclave with batches of 10 g. cyclopentane and 2 g. platinized C with initial H_2 pressures of 20–50 atm. On heating, the pressure rises regularly until, at a definite temp., there is a sudden drop indicating the beginning of a fast hydrogenation. That temp. is higher the higher the pressure, e.g., with initial H_2 pressures (at room temp.) of 20 and 50 atm., the pressure attains its max. and begins to fall rapidly at about 300 and 330°, resp. At a given const. pressure, the extent of the reaction (% C_5H_{10} formed) within 1 hr. increases first slowly, then, from a certain temp. up, very steeply; the higher the initial pressure, the higher is the temp. required to reach a stated degree of conversion. Thus, at an initial 20 and 50 atm., 50% conversion is reached at about 320 and 375°. At const. temp. (320–80°) the yield of C_5H_{10} in 1 hr. falls with increasing initial pressure. The same effects are found with a Ni-on-kieselguhr catalyst but, along with the simple hydrogenation to C_5H_{10}, there is a considerable amt. of deep disruption with formation of CH_4. With an initial pressure of 20 atm., no reaction occurred below 260°; at 270–80°, the liquid catalyzate contained 20–30% C_5H_{10}, the gas 70–80% CH_4. Under an initial pressure of 50 atm., the same products were obtained only at 340–50°. At 400°, all of the cyclopentane was converted to CH_4. Higher pressure of H_2 evidently results in a poisoning of the catalyst with respect to the hydrogenation reaction. On palladized C, cyclopentane is not hydrogenated at all. N. Thon

CA

10

Catalytic ring-opening hydrogenation of hydrocarbons of the cyclobutane series. B. A. Kazanskii and M. Yu. Lukina. *Doklady Akad. Nauk S.S.S.R.* 74, 253-6(1950).—On 10 ml. (3.05 g.) of a platinized C catalyst, at a space velocity of about 0.25 l./l. catalyst/hr., with H_2 passing at the approx. rate of 1 l./hr., hydrogenolysis of ethylcyclobutane (I) began at about 170°; at 250°, the ring is opened to the extent of 80%. With 1,3-dimethylcyclobutane, at 200°, ring opening attains 28%, and at 250°, 90%. With 1-methyl-3-ethylcyclobutane the extent of the reaction at 225° is 70-80%. Under the same conditions, at 250°, the cyclopentane ring is opened and hydrogenated only to the extent of 5%. By fractionation of the products of I, $EtCHMe_2$ and $Me(CH_2)_2Me$ are produced in almost equal amts., i.e. all C—C bonds in I are equiv. with regard to splitting, and the substituent exerts no orienting influence. Disubstitution, in the case of a 4-membered ring, has no inhibiting effect.

N. Thon

CA

10

Kazanskii, B. A., Petrov, A. D., and Bykov, G. V.: A. M. Butlerov Izbannye Raboty po Organicheskoi Khimii (Selected works of A. M. Butlerov in Organic Chemistry) Moscow, Acad. of Sciences, U.S.S.R. 1951. 688 pp. 32 r.

[illegible], N A

Vydayushchiysya sovetskiy uchenyy akademik Nikolay Dmitriyevich Zelinskiy
(The prominent Soviet scientist N. D. Zelinskiy) Moskva, "Znaniye," 1951.
32 p. illegrs.
Catalog'd from abstract.
Lecture, dedic'ted to the 90th anniversary of the prominent chemist-scientist
N. D. Zelinskiy, deals with his activities in the field of chemistry, especially his
organization of the Laboratory of Excessive Pressure, the founding of a school for
chemist-scientists at the Moscow University and his synthetic research work in naphtena.

N/5
917.610
.Z9z2

KAZANSKIY, B.A.

PA 174T9

USSR/Chemistry - Methallyl Chloride

Jan/Feb 51

"Synthesis of Hydrocarbons of Cyclobutane Series: Report 1. 1,-3-Dimethylcyclobutane," B. A. Kazanskiy, M. Yu Lukina, Inst Org Chem, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 1, pp 47-56

Synthesizes for 1st time 1,3-dimethylcyclobutane, isolated as cis- and trans-isomers. Obtains described series of new disubstitution deriv of cyclobutane. Develops simple method, giving high yield, to obtain methallyl chloride for above synthesis.

LC

174T9

CA

22

Determination of individual composition of straight run gasolines by a combination method. G. S. Landsberg and D. A. Kazanskii, *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, No. 2, 109-14. The problems of analysis of compn. of petroleum fractions are summarized and reviewed. On the basis of considerable exptl. background (the results are not specifically enumerated) the following scheme is recommended. A preliminary fractionation by suitable efficient columns, followed by chromatography on silica gel, for sepn. of aromatic components, by using EtOH, then H$_2$O, for washing; pentane is recommended for elution of high aromatic materials. The aromatic free material is subjected to dehydrogenation over Pt at 300° to convert 6-member cycles into aromatic derivs. and fractionation of the products gives the distribution of cyclohexane derivs. Finally, narrow cuts are taken and Raman spectra used for identification of the specific substances. At the present time identification is limited to substances in cuts below 125 30°. G. M. Kosolapoff

1951

KAZANSKIY, B. A.

USSR/Chemistry - Petroleum, Hydrocarbons — Jan/Feb 51

"Lines of Development of Academician N. D. Zelinskiy's Work," B. A. Kazanskiy, A. N. Nesmeyanov, A. F. Plate, Moscow

"Uspekh Khim" Vol XX, No 1, pp 18-53

General review of N. D. Zelinskiy's chem achievements in fields of synthesis of hydrocarbons, intraconversions of hydrocarbons, research into the origin of petroleum, catalytic conversions of heterocyclic systems, and catalytic conversions of org S compds.

193T6

KAZANSKIY, B. A.

191T8

USSR/Chemistry - Theory of Structure Jul/Aug 51

"Review of A. M. Butlerov's 'Selected Works in Organic Chemistry,' Edited and Annotated by Academician B. A. Kazanskiy, Corresponding Member, Academy of Sciences USSR, A. D. Petrov, and G. V. Bykov [1951 ?]," V. M. Rodionov

"Uspekh Khim" Vol XX, No 4, pp 516-519

Outlines Butlerov's work in detail. Deplores Kekule's plagiarism, the lack of recognition by Western European scientists, and the fact that Butlerov's pioneering work remained forgotten by Russian chemists until the early 1940's.

191T8

USSR/Chemistry - Hydrogenation 21 Jan 51

"Addition of Hydrogen at the Time of Its Separation to an Isolated Double Bond," Acad B. A. Kazanskiy, I. V. Gostunskaya

"Dok Ak Nauk SSSR" Vol LXXVI, No 3, pp 407-410

In the hitherto known reactions of reduction of 1,3-dienes by hydrogen which has just formed, addn of 1 mol of hydrogen under formation of monoolefin was observed exclusively. This refers particularly to cases where hydrogen was formed by decompn of calcium ammoniate (I). In experiments on reduction of the dienes 2,5-dimethylhexadiene-1,5 and

178T11

[redacted]

USSR/Chemistry - Hydrogenation (Contd) 21 Jan 51

2,5-dimethylhexadiene-2,4 and the monoolefin 2,5-dimethylhexene-2 with I, it was shown that 2,5-dimethylhexane is also formed to some extent.

178T11

KAZANSKIY, ACAD B. A.

DUBININ, M.M., akademik, otvetstvennyy redaktor; GAPON, Ye.N.; GAPON, T.B.; ZHYRAKHINA, Ye.S.; RACHINSKIY, V.V.; BELEN'KAYA, I.M.; SHUVAEVA, G.M.; ROGINSKIY, S.Z.; YANOVSKIY, N.I.; FUKS, N.A.; KISELEV, A.V.; NEYMARK, I.Ye.; SLINYAKOVA, I.B.; KHATSET, F.I.; LOSEV, I.P.; TROSTYANSKAYA, Ye.B.; TEVLINA, A.S.; DAVANKOV, A.B.; SALDADZE, K.M.; BRUMBERG, Ye.M.; ZHIDKOVA, Z.V.; VEDENEEVA, N.Ye.; NAPOL'SKIY, S.A.; MIKHAYLOVA, Ye.A.; KAZANSKIY, B.A.; RYABCHIKOV, D.I.; SHEMYAKIN, F.M.; KRETOVICH, V.L.; BUNDEL', A.I.; SAVINOV, B.G.; VENDT, V.P.; EPSHTEYN, Ya.A.

[Research in the field of chromatography transactions of the All-Union Conference on Chromatography, November 21-24, 1950] Issledovaniia v oblasti khromatografii; trudy Vsesoiuznogo soveshchaniia po khromatografii, 21-24 noiabria 1950 g. Moskva, Izd-vo Akademii nauk SSSR, 1952. 225 p.
(MLRA 6:5)

1. Akademiya nauk SSSR. Otdelenie khimicheskikh nauk.
(Chromatographic analysis)

KAZANSKIY D. A.

5/9/75

GONIKBERG, M.G.; GAVRILOVA, A.Ye.; KAZANSKIY, B.A.

Isomerization of alkanes in the presence of aluminum chloride and hydrogen under pressure. I. Isomerization on n-hexane. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. '52, 171-6 [Engl. translation].
(CA 47 no.19:9893 '53)

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

4
2 Chem

Synthesis of hydrocarbons of the cyclobutane series. II. 1-Methyl-3-ethylcyclobutane and bis(3-methylcyclobutyl)-methane. B. A. Kazanskiĭ and M. Yu. Lukina. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 319–24(Engl. translation).—See *C.A.* 47, 3247e. H. L. H.

KAZANSKIY, B. A.

4

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

Chem

Catalytic hydrogenation of doubly unsaturated compounds with conjugated system of double bonds. I. Hydrogenation of bilocrotyl. B. A. Kazanskii and N. I. Popova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 409-17 (Engl. translation).—See *C.A.* 47, 4831h. H. L. H.

KAZANSKIY, B. A.

USSR/Chemistry - Hydrocarbons, Isomerization Jan/Feb 52

"Isomerization of Alkanes in Presence of $AlCl_3$ Under Hydrogen Pressure. I. Isomerization of n-Hexane," M. G. Gonikberg, A. Ye. Gavrilova, B. A. Kazanskiy, Inst of Org Chem, Acad Sci USSR

"Iz Ak Nauk, Otdel Khim Nauk" No 1, pp 157-162

Under elevated hydrogen pressure, cracking is brought to a min and the formation of so-called "lower layers" in the reaction product is avoided altogether. Obtained yields of hexane isomers corresponding to 80% of the original n-hexane. Increasing the hydrogen pressure slows down the isomerization progress. Isomerization proceeds in stages, with 2-methylpentane apparently being formed as an intermediate product in the formation of 2,2-dimethylbutane. Presents some general theories explaining the above process.

208T13

Chem Abs V48
1-25-54
Organic Chemistry

Hydrindene. B. A. Kazanskii, A. F. Plate, and E. M. Tsvetkova. *Akad. Nauk S.S.S.R., Inst. Org. Khim., Sintezy Org. Soedinenii, Sbornik 2*, 70–1(1952); cf. *C.A.* 47, 8003*h*.—Hydrogenation of indene in the presence of 10% Raney Ni at 60–150 atm. H at room temp. over 4–5 hrs. yields 92–5% *hydrindene*, b_{760} 176.1–6.2°, d_{20} 0.9640, n_D^{20} 1.5383. The product is best distd. from Na. G. M. K.

MF 4-20-54

KAZANSKIY, B. A.

(3)

1,3-Dibromobutane. B. A. Kazanskiĭ and M. Yu. Lukina. *Akad. Nauk S.S.S.R., Inst. Org. Khim., Sintezy Org. Soedinenii, Sbornik* 2, 79–80(1952).—To 270 g. 1,3-butanediol was added over 5 hrs. at 10–15° with good stirring 600 g. PBr_3; after stirring 1 hr. at room temp. the mixt. was left overnight, heated 3 hrs. on a steam bath and poured on ice. The org. layer, after washing with H_2O and Na_2CO_3, gave 82–7% *1,3-dibromobutane*, b_{12} 172–4°, b_{760} 174.5–5.5°, n_D^{20} 1.5092, d_{20} 1.7304. In the prepn. the stirrer must be so arranged as to provide good dispersion of PBr_3 as it falls into the soln.

G. M. Kosolapoff

MF 1-28-54

KAZANSKIY, B. A.; POPOVA, N. I.

Diolefins

Catalytic hydrogenation of diolefins with a conjugated system of double bonds. Part 1. Hydrogenation of diisocrotyl. Izv. AN SSSR Otd. khim. nauk, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1958. Unclassified.

KA[illegible], P. A., [illegible]EVA, YU. I.

Hydrocarbons

Synthesis of hydrocarbons of the cyclobutane series. Part 2. 1-Methyl-3-ethylene oxide. Zhur. prikl. khim. 25 No. 2 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

KAGANSKIY, B. A., LUKINA, M. YU.

Esters

Synthesis of diethyl ester of 1-methylcyclobutane-2, 2-dicarboxylic acid. Dokl, AN SSSR 83, No. 5, 1952
Institut Organicheskoy Khimii
Academii Nauk SSSR rcd. 30 Jan. 1952

SO: Monthly List of Russian Accessions, Library of Congress, August 1953, Uncl.

KAZANSKIY, B. A.

Brit Abs AII
July 1953
Aliphatic

(2)

Catalytic hydrogenation of some trisubstituted ethylenes in the presence of [illegible]. [illegible] A. Kazanskii and U. E. Grushko (*C. R. Acad. Sci. URSS*, 1952, 87, 767—770).—Hydrogenation of trisubstituted ethylenes and of their mixtures is studied in the presence of Pt and Pd black, and Ni catalysts. On the Pt black the most rapidly hydrogenated deriv. is $CHMe{:}CEt_2$ (**I**), then $CHPh{:}CMe_2$ (**II**), $CHMe{:}CPh_2$ (**III**), and $CHPh{:}CPh_2$ (**IV**), in that order. On the Pd black the order is **II**, **III**, **IV**, and **I**, the rate of hydrogenation being much faster than on Pt in the case of **II** and **III** and about the same in the case of **I**. In the presence of Ni catalyst the order remains as with Pd black but the rate of hydrogenation of **II** is higher, and that of **III** lower than on Pd. In an equimolar mixture of **I** and **III**, 96·8% of the first mol. of H_2 consumed is taken up by **III**; in a mixture of **I** and **IV**, 83·7% is taken up by **IV**; in a mixture of **II** and **IV**, 93·1% is taken up by **II**.

6/8/54
BW

KAZANSKIY, B.A.

ARBUZOV, A.Ye., akademik; KAZANSKIY, B.A., akademik; PETROV, A.D., chlen-korrespondent AN SSSR; NIKITIN, N.I., chlen-korrespondent AN SSSR; FIGUROVSKIY, N.A., professor, otvetstvennyy redaktor; POGODIN, S.A., professor; ZVYAGINTSEV, O.Ye., professor; YEVTIKHVA, P.M., uchenyy sekretar'.

[Materials on the history of Soviet chemistry; reports given at the 2nd All-Union Conference on the History of Soviet Chemistry, 21-26 April 1951] Materialy po istorii otechestvennoi khimii; sbornik dokladov na vtorom Vsesoiuznom soveshchanii po istorii otechestvennoi khimii, 21-26 aprelia 1951 g. Moskva, Izd-vo Akademii nauk SSSR, 1953. 318 p. (MLRA 7:4)
(Chemistry--History)

KAZANSKIY, B. A.

Effect of pressing on the activity and structure of alumina-molybdena catalysts. O. D. Sterligov, M. G. Gonikberg, A. M. Rubinshtein, and B. A. Kazanskii. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, [illegible] (Engl. translation).—See C.A. 47, 5781e. H. L. H.

USSR .

Catalytic hydrogenation of doubly unsaturated compounds with a conjugated system of double bonds II Hydrogena-
tion of isoprene in the presence of platinum palladi[illegible] and
nickel [illegible]

KAZANSKIY, B. A.

USSR

In memory of Academician Nikolai Dmitrievich Zelinskii. A. N. Nesmeyanov, A. V. Topchiev, B. A. Kazanskii, and N. I. Shuikin. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 683–90(Engl. translation).—See *C.A.* 48, 4268h.
H. L. H.

USSR/Chemistry - Catalysis KAZANSKIY, B.A. Jan/Feb 53

"The Effect of Compression Pressure of the Activity and Structure of the Alumomolybdenum Catalyst," O.D. Sterligov, M. G. Gonikberg, A. I. Rubinshteyn and B. A. Kazanskiy, Inst of Org Chem, Acad Sci USSR

Iz Ak Nauk SSSR, OKhN, No 1, pp 28-36

The authors studied the effect of the degree of compression pressure (from 2,000 to 20,000 atm) on the structure of the compressed alumomolybdenum catalyst and on its productivity, specific activity, and stability in the reactions involving the dehydrocyclization of n-heptane and the dehydrogenation of cyclohexane. They dotd that an increase in the compression pressure leads to an increase in productivity and a decrease in the specific activity of the catalyst (in an equal degree for both reactions studied). They also dotd that the stability of the compressed alumomolybdenum catalyst increases with an increase in the compression pressure (also in an equal degree for both reactions studied). An X-ray examination revealed no change in the primary (X-ray) structure of the catalyst after it had been subjected to a high hydrostatic pressure.

25373

KHLYANSKIY, E. A.

3

USSR

The preparation of ethyl 1,1-cyclobutanedicarboxylate. S. E. Bulk and D. A. Khlyanskii. *Vestnik Moskov. Univ.* 8, No. 5, *Ser. Fiz.-Mat. i Estestven. Nauk* No. 2, 125-8(1953). During the condensation of $CHNa(CO_2Et)_2$ (I) with $Br(CH_2)_3Cl$ a reversible side reaction between I and $Cl(CH_2)_3CNa(CO_2Et)_2$ (II) is known to take place. II was prevented from sepg. out and the yield of di-Et 1,1-cyclobutanedicarboxylate was increased to 60% (from 35 to 40%, cf. *C.A.* 37, 4705⁴) by employing a mixt. of C_6H_6 and EtOH as solvent. I is only slightly sol. in cold C_6H_6 but its soly. increases with higher temp., and particularly in the presence of $CH_2(CO_2Et)_2$, thus controlling the rate of reaction. Cf. Sidgwick and Brewer, *C.A.* 20, 740. PrOH and iso-PrOH were unsuccessful in replacing EtOH. G. A.

USSR/Chemistry - Catalysts, Jul/Aug 53
Hydrocarbons

"Catalytic Hydrogenation of Conjugated Dienes. II Hydrogenation of Isoprene in the Presence of Platinum, Palladium, or Nickel," B. A. Kazanskiy, I. V. Kostunskaya, A. M. Granat, Moscow State U

Iz Ak Nauk SSSR OKhN, No 4, pp 670-677

Hydrogenation of isoprene in the presence of Pd, Ni, or Pt proceeds chiefly with addition of H_2 at the 1,4 positions. With Pt there is less of a selective effect than with Pd or Ni as far as the formation of hydrogenation products is concerned. The shape of the hydrogenation velocity curves does not characterize the actual course of the reaction.

270T11

270T11

KAZANSKIY, B. A.

USSR/ Scientists - Chemistry

Card 1/1 : Pub. 40 - 1/22

Authors : Nesmeyanov, A. N.; Topchiev, A. V.; Kazanskiy, B. A.; and Shuykin, N. I.

Title : In memory of Academician N. D. Zelinskiy

Periodical : Izv. AN SSSR. Otd. khim. nauk 5, 765-774, Sep-Oct 1953

Abstract : Eulogy by the president and staff members of the Academy of Sciences USSR honoring the death of academician Nikolay Dmitrievich Zelinskiy, famous Russian chemist who died on July 31, 1953 at the age of 93. Illustration.

Institution : ...

Submitted : ...

KAZANSKIY, B. A.

USSR/Chemistry - Analytical, Light Dispersion Sep/Oct 53

"Dispersiometric Methods for Determination of Aromatic Hydrocarbons in Mixtures With Other Types of Hydrocarbons. Analysis of Mixtures Which Do Not Contain Unsaturated Compounds," B. A. Kazanskiy, M. I. Rozengart, O. D. Sterligov, G. A. Tarasova, Inst Org Chem, Acad Sci USSR

Zhur Anal Khim, Vol 8, No 5, pp 245-252

Comparison of 4 dispersiometric methods for the detn of aromatic hydrocarbons in mixts with paraffins and naphthenes has been made. The method selected as best has the advantage that detn of sp wt and corrections for the analysis of mixts contg benzene and toluene are not required. Detn of dispersions of various mixts (n-hexane-benzene, n-heptane-benzene, n-heptane-toluene, and methylcyclohexane-toluene) has been made. Found that relative dispersion values for two-component mixts calcd acc to the formula given, have the property of additivity and may therefore be used for detn of aromatic hydrocarbons in mixts.

27179

27179

1. KAZANSKIY, B. A.; EIDUS, YA. T.

2. USSR (600)

4. Krentsel', B. A.

7. "Chemical utilization of petroleum hydrocarbon gases." A. S. Nekrasov, B. A. Krentsel'. Reviewed by B. A. Kazanskiy, YA. T. Eidus. Usp. khim., 22, no. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KAZANSKIY, B. A.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Organic Chemistry

The state of the theory of chemical structure in organic chemistry. B. A. Kazanskii and [illegible]
Obshchei Khim. 23, [illegible]. A discussion of the Butlerov theories of structure and [illegible] Ingol'dov's theory of "contact bonds." [illegible]

KAZANSKIY, B. A.

The state of the theory of chemical structure in organic chemistry. B. A. Kazanskii and G. V. Bykov. *J. Gen. Chem. U.S.S.R.* 23, 1771–97 (1953) (Engl. translation). —See *C.A.* 48, 1233c.

H. I. H.

KAZANSKII, B. A.

(3)

The thermal and catalytic cracking of paraffin hydrocar-
bons at high pressures. M. G. Gonikberg, A. F. Chuvilova,
and B. A. Kazanskii. *Doklady Akad. Nauk S.S.S.R.* 89,
483-6(1953).—Hexane and heptane were subjected to ther-
mal cracking at pressures varying from 100 to 3100 atm.
and to catalytic cracking at pressures from 100 to 1250 atm.
The temp. was 410–420°. The catalyst was an Al silicate
dried in air at 500° for 3 hrs. All expts. lasted 3 hrs. The
products were then analyzed by fractional distn. through a
30-plate column. For both types of cracking, expts. with
H as the pressurizing agent were also carried out. From the
results it was concluded: (1) The velocity of thermal crack-
ing decreases with increasing pressure as evidenced by the
extent of reaction. (2) Low pressures of H inhibit thermal
cracking while high pressures accelerate it. (3) The cata-
lytic cracking of heptane is accelerated by high pressures.
(4) High H pressures accelerate the catalytic cracking. (5)
High-pressure catalytic cracking results in more isomeriza-
tion and less polymerization than is the case for thermal
cracking under similar conditions. The pressure effects are
not due to shifting of equil. since equil. conditions are never
reached in these expts. The catalytic cracking results may
be due to the effect of pressure on the rates of adsorption of
the hydrocarbon on the catalyst. Joseph B. Levy

11-24-54
OAP

YAKUBOVICH, A.Ya.; MOTSAREV, G.V.; KAZANSKIY, B.A., akademik.

Peculiarities in the halogenation of phenylchlorosilanes. Dokl. AN SSSR 91 no.2:277-280 Jl '53. (MLRA 6:6)

1. Akademiya nauk SSSR (for Kazanskiy). (Halogenation) (Silanes)

KAZANSKIY, B.A.

By-products in the Sandmeyer reaction. A. L. Liberman, O. D. Sterligov, T. V. Lapshina, and B. A. Kazanskii (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). Doklady Akad. Nauk S.S.S.R. 91, 845-8(1953).—While it is [illegible] that in the Sandmeyer reaction the [illegible] the position previously occupied by the [illegible] this is not necessarily the case. When [illegible] $MeC_6H_4NH_2$ was converted to the Br [illegible] Sandmeyer reaction, and the by-product [illegible] it was found that the material [illegible] by means of H_2SO_4 and NaOH [illegible] MeC_6H_4OH but an equimolar mixt. [illegible] I [illegible] in 13% yield [illegible] was treated with concd. HBr and $NaNO_2$ [illegible] Sandmeyer reaction the above [illegible] yield, thus affording a [illegible] phenols. The Cu_2Br_2 was not [illegible] reaction and the same product formed in [illegible] higher yield. Thus $NaNO_2$ can be used in concd. HBr [illegible] as an oxidizing agent for bromination by nascent Br. o-$MeC_6H_4NH_2$ was purified through the Ac deriv. to a constant f.p. (cooling curve of the product is shown) at 110.4°. The free amine, freed by hydrolysis with 25% H_2SO_4, was then diazotized in 102-g. portions in 48% HBr according to Sandmeyer and the product steam-distd., yielding, after the usual treatment, 48% o-MeC_6H_4Br. Recovery of the org. material from the washings (NaOH) gave o-MeC_6H_4OH, identified [illegible] several derivs. The residue after its distn. solidified and was purified by crystn. from H_2O, yielding I, m. 64.7-5.8° [illegible] 6.4°. In a quant. expt. 108.4 g. o-$MeC_6H_4NH_2$ in 470 [illegible] 47% HBr was diazotized with 77.8 g. dry $NaNO_2$, the diazonium salt decompd. by 20 g. Cu_2Br_2 and 1 g. Cu, and the mixt. distd. with steam, yielding 78.6 g. o-MeC_6H_4Br; from the fore run of the distn. [illegible] washes gave [illegible] o-cresol and 24.7 g. bromocresol, identical with I, b_{14} 131 [illegible], m. 64.2-4.4°. To 108.1 g. o-cresol in 470 ml. 47% HBr chilled to 0° was added slowly 77.8 g. $NaNO_2$ with shaking, then 20 g. Cu_2Br_2 and 1 g. Cu shavings, the mixt. warmed to 49-5°; the product steam-distd., the distillate extd. with Et_2O, and the ext. distd., giving 60% I. When Cu_2Br_2-Cu was omitted, the yield rose to 74%. To 92 g. MePh in 470 ml. 47% HBr was slowly added over 1 hr. at 0° 77.8 g. $NaNO_2$, the mixt. warmed 1 hr. to 38-40°, cooled, and the upper layer sepd.; distn. gave 13% BrC_6H_4Me (isomer not identified), b_{752} 180-3.5°, n_D^{20} 1.5582, d_{20} 1.4015. G. M. K.

BARYSHNIKOVA, A.N.; TITOV, A.I.; KAZANSKIY, B.A., akademik.

Mechanism of nitrating unsaturated compounds. Dokl.AN SSSR 91 no.5:1099-1102 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Kazanskiy).
(Nitration) (Compounds, Unsaturated)

IZMAIL'SKIY, V.A.; SOLODKOV, P.A.; KAZANSKIY, B.A., akademik.

Absorption spectra of molecular complexes of aromatic amines with quinolinic salts. Investigation of the absorption spectrum of the molecular complex [4-(*n*-dimethylaminostyryl)-quinoline + 1-ethyl-2-styrylquinolinium iodide]. Dokl.AN SSSR 91 no.5:1119-1122 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Kazanskiy). 2. Moskovskiy pedagogicheskiy institut im. V.P.Potemkina. (Absorption spectra) (Quinoline derivatives)

KURSANOV, D.I.; PARNES, Z.N.; KAZANSKIY, B.A.

Hydrogen-exchange reactions of α,β-unsaturated ketones. Dokl.AN SSSR 91 no.5:1125-1128 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Kazanskiy). 2. Institut organicheskoy khimii Akademii nauk SSSR (for Kursanov and Parnes). (Ketones)

DOGADKIN, B.; FEL'DSHTEYN, M.; DOBROMYSLOVA, A.; SHKURINA, V.; KAPLUNOV, M.; KAZANSKIY, B.A., akademik.

Appearance of polymerization in the process of vulcanization. Dokl.AN SSSR 92 no.1:61-64 S '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Kazanskiy). 2. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova (for Dogadkin, Fel'dshteyn, Dobromyslova, Shkurina., and Kaplunov).
(Polymers and polymerization) (Vulcanization)

SETKINA, V.N.; BYKOVA, Ye.V.; KAZANSKIY, B.A., akademik.

Hydrogen exchange of standard carboxylic acids. Dokl.AN SSSR 92 no.2:341-343 S '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Kazanskiy). 2. Institut organicheskoy khimii Akademii nauk SSSR (for Setkina and Bykova). (Carboxylic acids)

TIMOFEYEVA, Ye.A.; NOVIKOV, S.S.; SHUYKIN, N.I.; KAZANSKIY, B.A., akademik.

Dehydrogenation of η-pentane. Dokl.AN SSSR 92 no.2:345-348 S '53.
(MLRA 6:9)

1. Akademiya nauk SSSR (for Kazanskiy). (Dehydrogenation) (Pentane)

KROLIK, L.G.; LUKASHEVICH, V.O.; KAZANSKIY, B.A., akademik.

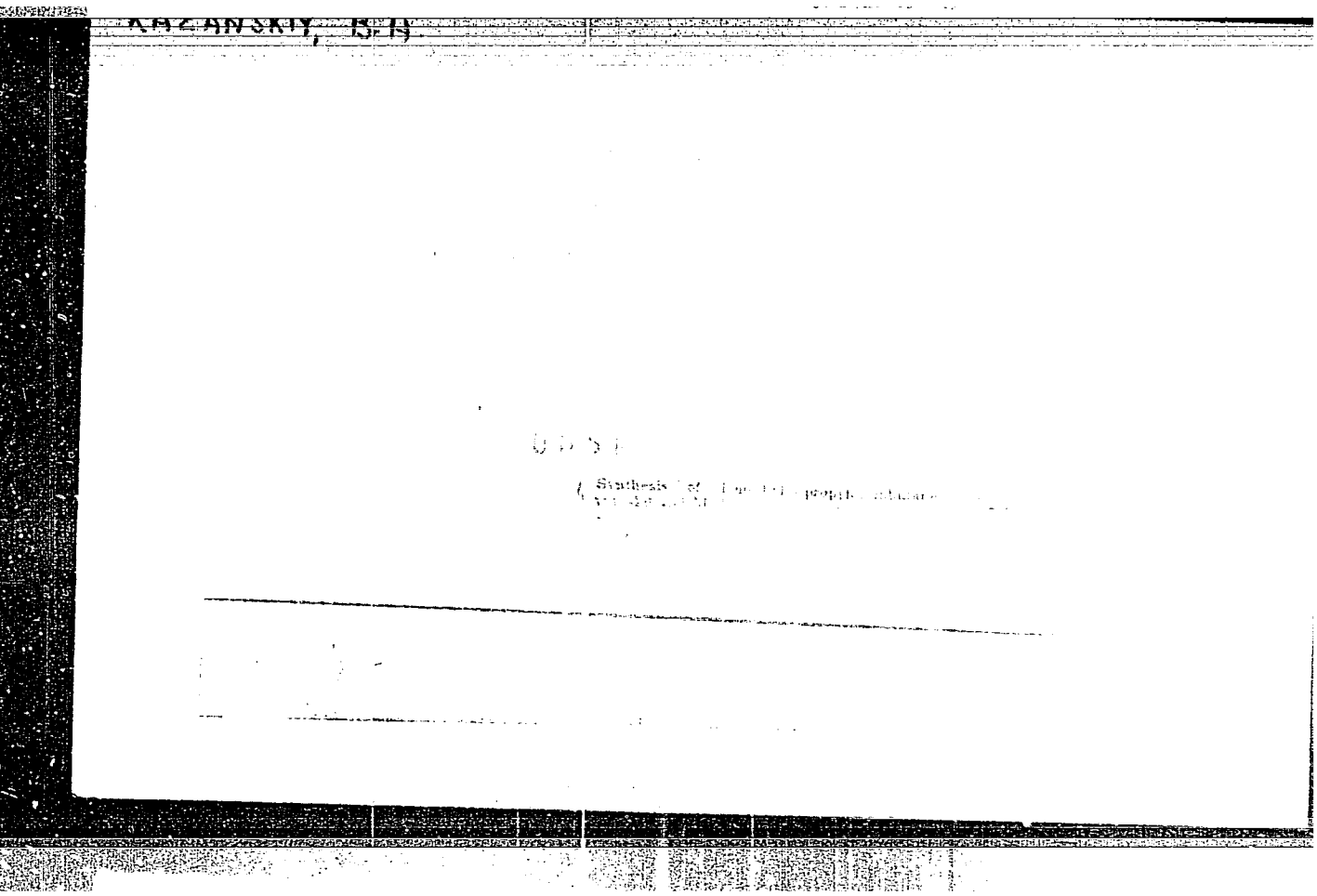
Hydrazobenzene hydrochloride and some of its conversions. Dokl.AN SSSR 93 no.4:663-666 D '53. (MLRA 6:11)

1. Akademiya nauk SSSR (for Kazanskiy). 2. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley im. K.Ye.Voroshilova (for Krolik and Lukashevich). (Hydrazonebenzene)

SHOSTAKOVSKIY, M.F.; ANDRIANOV, K.A., chlen-korrespondent; SHIKHIYEV, I.A.; KOCHKIN, L.A.; KAZANSKIY, B.A., akademik.

Investigation in the field of synthesis and conversions of oxygen-containing silicon organic compounds. Synthesis of methyl-, ethyl- and isopropyl-triethylsilane acetals. Dokl.AN SSSR 93 no.4:681-683 D '53. (MLRA 6:11)

1. Akademiya nauk SSSR (for Andrianov and Kazanskiy). 2. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR (for Shostakovskiy, Andrianov, Shikhiyev and Kochkin).
(Acetals) (Silicon organic compounds)

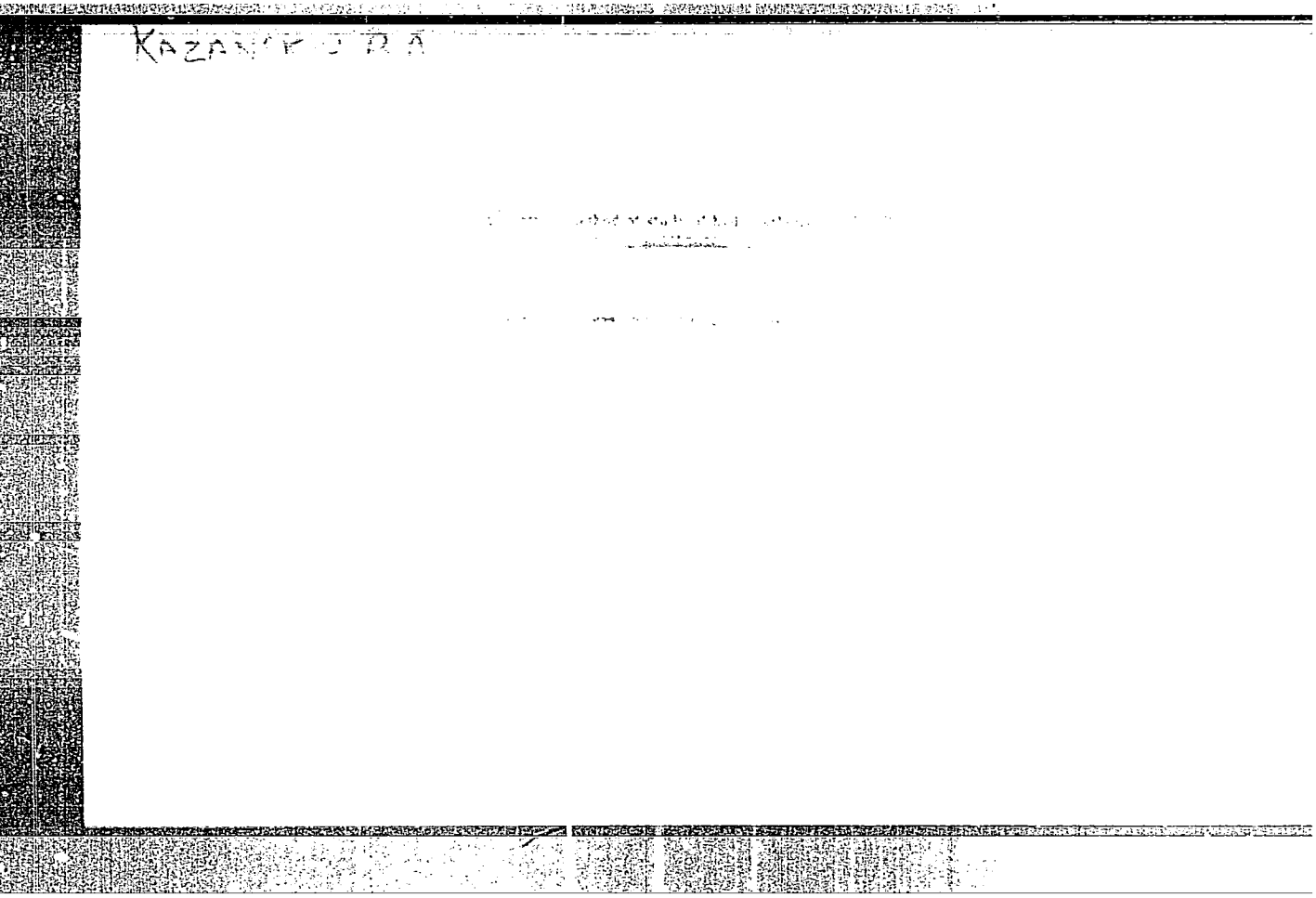


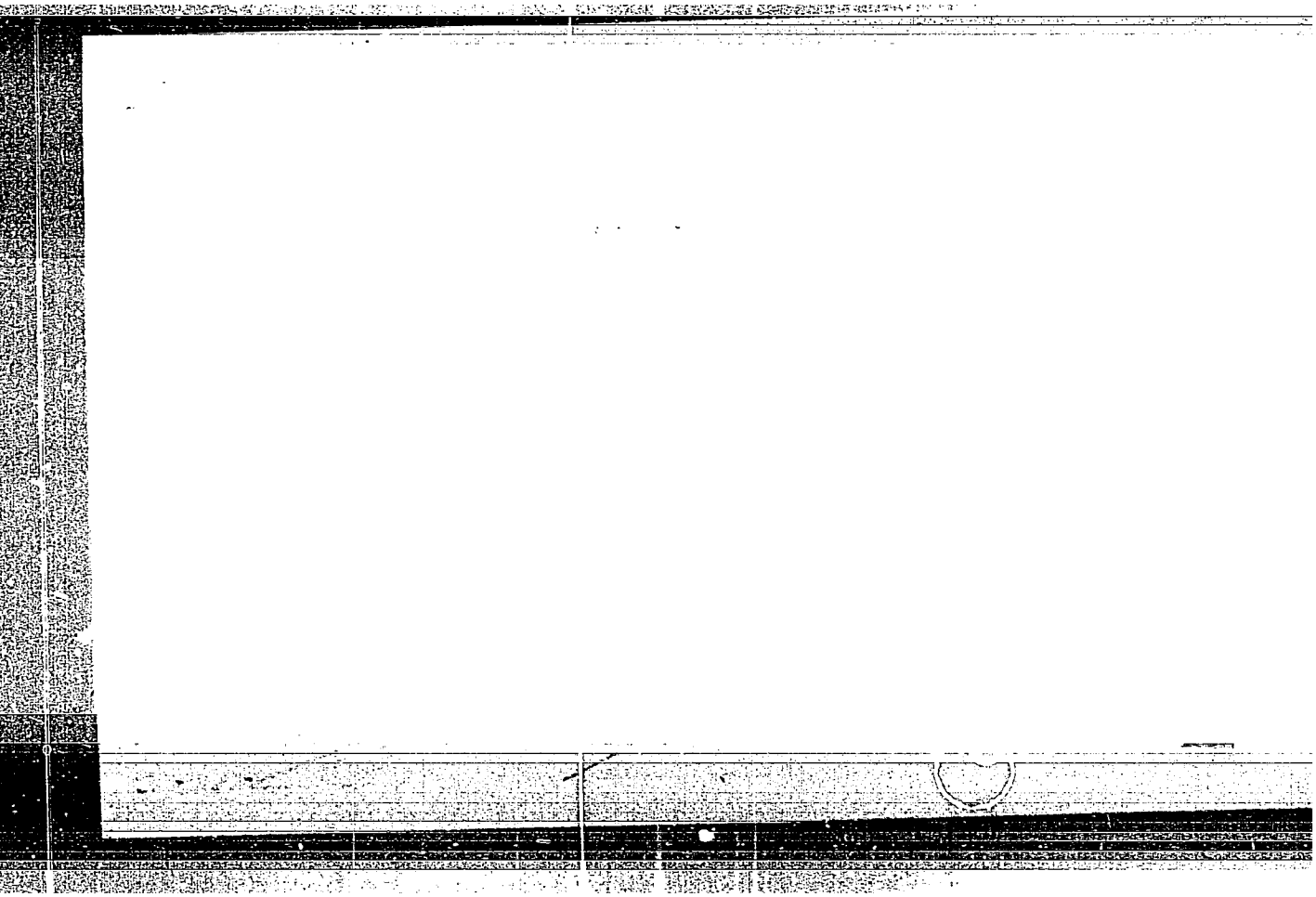
KAZANSKIY, B.A.

USSR.

KOZANSKIY, G. A.

Determination of suicidal hydrocarbon





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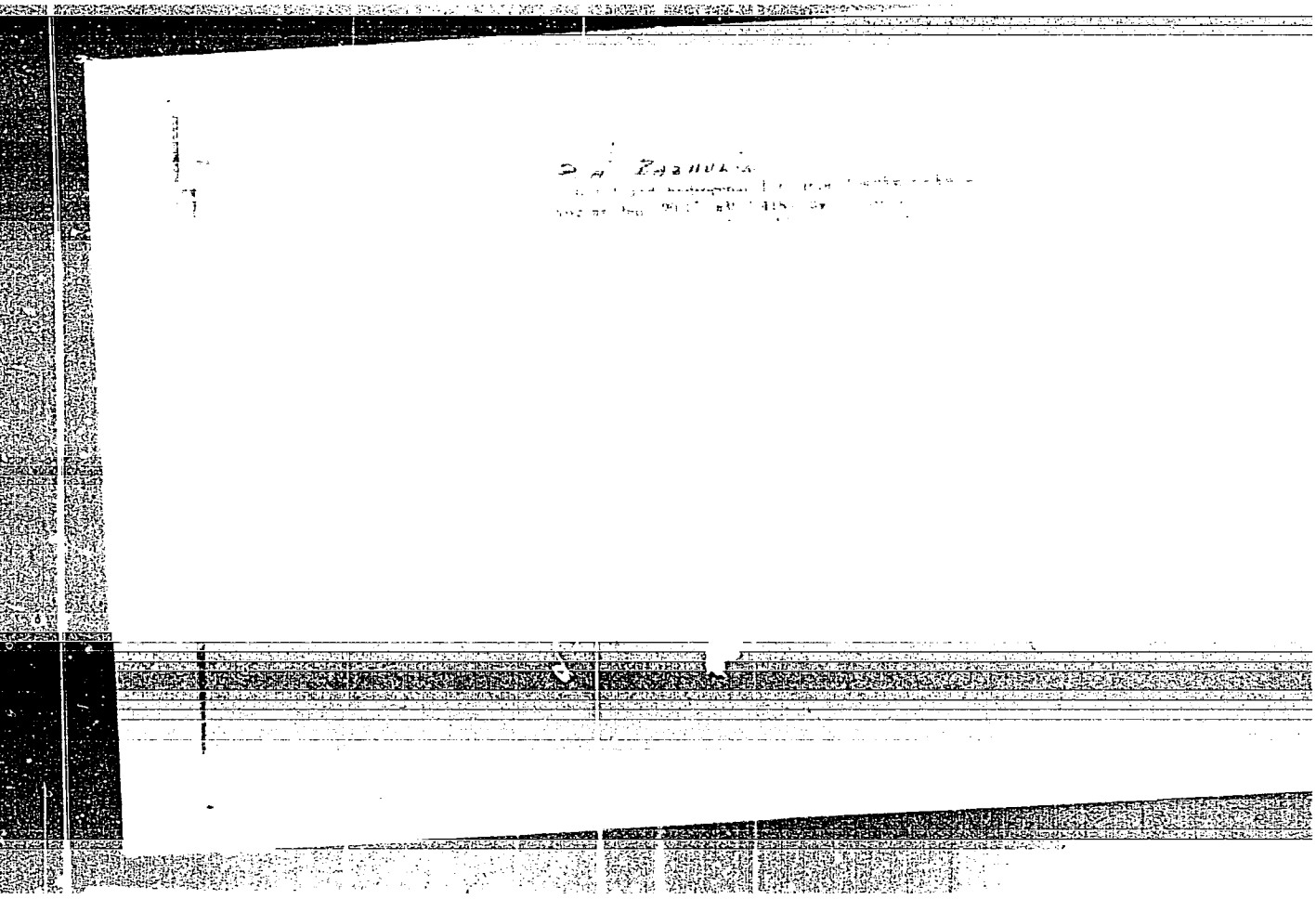
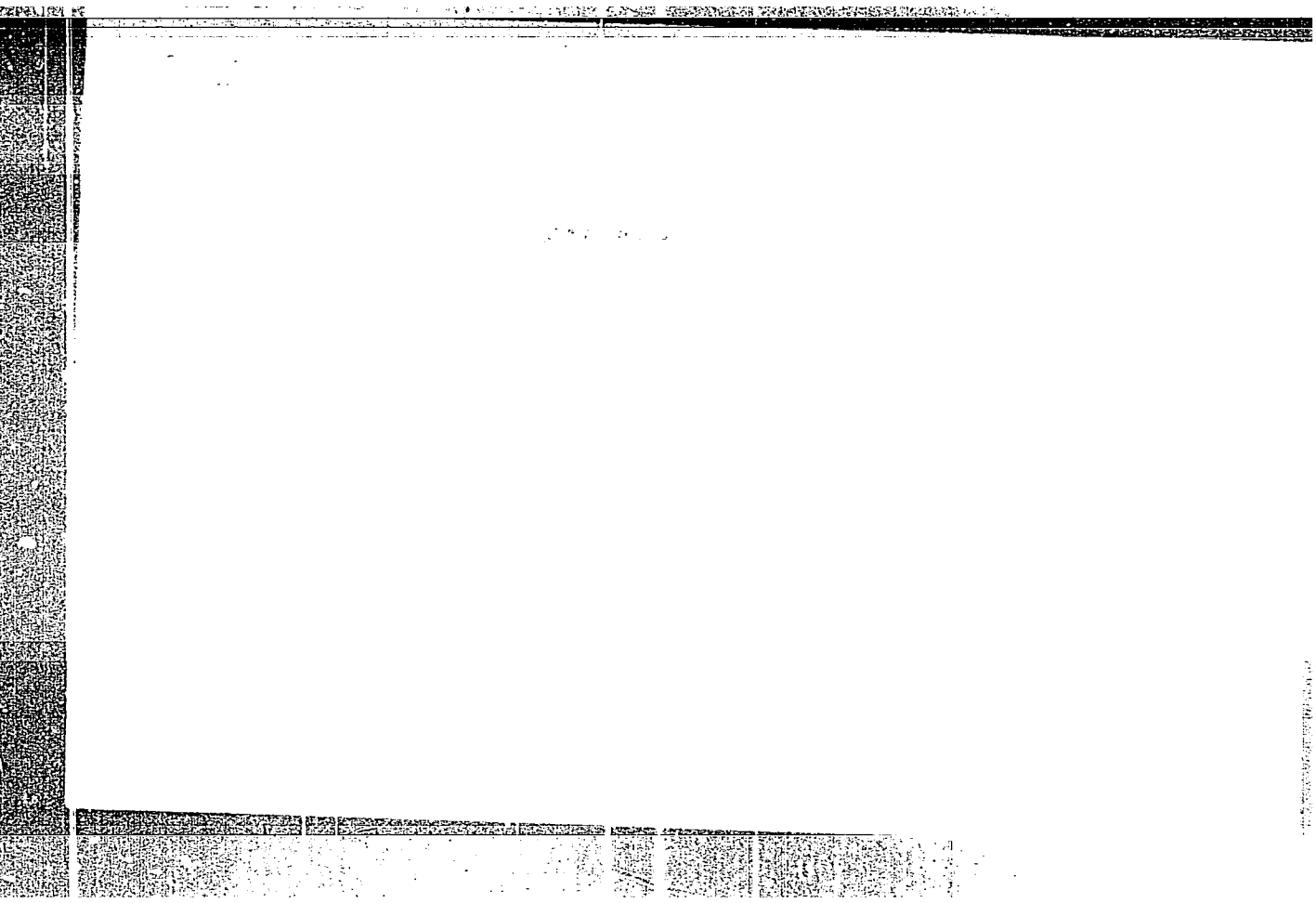




APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721320001-5"

KAZANSKIY, B.A.

1

V Synthesis and catalytic hydrogenolysis of 1,1,2-trimethylcyclopropane. B. A. Kazanskii, M. Yu. Lukina, and V. A. Ovodova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1954, 759-61 (Engl. translation).—See *C.A.* 49, 13906a.
B. M. B.

(2)

KAZANSKIY, B. A.

USSR.

Determination of individual hydrocarbons in gasolines by the combined method. V. Gasoline from Emba crude oil. B. A. Kazanskii, G. S. Landsberg, A. F. Plate, P. A. Bazhulin, A. L. Liberman, E. A. Mikhailova, M. M. Sushchinskii, G. A. Tarasova, S. A. Ukholin, and S. V. Voron'ko (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1954, 865-77; cf. *C.A.* 48, 14170*h*.—Analysis of a gasoline from Emba crude oil by a combination of distn., chromatography, and dehydrogenation-hydrogenation reactions resulted in establishing the structure of 81.1% of the hydrocarbons present. The gasoline is of naphthenic type, and the paraffins are predominantly branched. The following compds. were identified: 2,2-dimethylbutane, 2,3-dimethylbutane, 2-methylpentane, 3-methylpentane, hexane, methylcyclopentane, 2,2-dimethylpentane, 2,4-dimethylpentane, cyclohexane, 3,3-dimethylpentane, 1,1-dimethylcyclopentane, 2,3-dimethylpentane, *cis*- and *trans*-1,3-dimethylcyclopentanes, *trans*-1,2-dimethylcyclopentane, methyl- and ethylcyclohexanes, 1,2,4-trimethylcyclopentane, 2,2- and 2,4-dimethylhexanes, 1,2,3-trimethylcyclopentane, 2,4-dimethylhexane, 1,2,3-trimethylcyclopentane, 3- and 4-methylheptane, 1,1-dimethylcyclopentane, 1,1,3-trimethylcyclohexane, 3- and 4-methyloctanes. EtPh and *o*-, *m*-, and *p*-xylene were also identified, *m*-xylene being the predominant aromatic hydrocarbon. G. M. Kosolapoff

KAZANSKIY, B.A.

Synthesis and catalytic hydrogenolysis of 1,1,2-trimethylcyclopropane. B. A. Kazanskii, M. Yu. Lukina, and V. A. Ovodova (N. D. Zelinskii Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1954, 878-81. —To 96.6 g. $N_2H_4.H_2O$ was added slowly 98.1 g. mesityl oxide, and the cooled mixt. treated with solid NaOH; distn. of the org. layer gave 61-70% 3,3,5-trimethylpyrazoline, b. 158-60°. This (44.8 g.), 78.4 g. KOH, and 50 ml. triethyleneglycol were slowly heated to 220-35°, at which temp. the reaction began with distn. of 1,1,2-trimethylcyclopropane, the reacting mass being kept at about 235-60°. After the usual washing and distn. there was obtained 41.7% *1,1,2-trimethylcyclopropane*, b_{760} 52.6°, d_{20} 0.6948, n_D^{20} 1.3862. This passed over Pt-C at 60° underwent complete cleavage to 2,2-dimethylbutane. The result is the same at 100°. G. M. Kosolapoff

(2)

KAZANSKIY, B.A.; LANDSBERG, G.S.; PLATE, A.F.; LIBERMAN, A.L.; MIKHAYLOVA, Ye.A.; BAZHULIN, P.A.; BATUYEV, M.I.; UKHOLIN, S.A.; BULANOVA, T.F.; TARASOVA, G.A.

Composite method for the determination of individual hydrocarbons in gasolines. Part 3. The Surakhany gasolines. Izv.AN SSSR. Otd.khim.nauk no.2:278-291 Mr-Ap '54. (MLRA 7:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo, Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR.
(Hydrocarbons) (Surakhany--Petroleum) (Petroleum--Surakhany)

KAZANSKIY, B.A.

USSR/ Chemistry Fuels

Card : 1/1

Authors : Kazanskiy, B.A., Landsberg, G.S., Plate, A.F., Bazhulin, P.A., Liberman, A.L., Suschinskiy, N.M., Tarasova, G.A., Ukholin, S.A., Voron'ko, S.V.

Title : Combined method for the determination of the individual hydrocarbon composition of gasolines. Part 4.- Gasoline from the Tuymazinsk petroleum.

Periodical : Izv. AN SSSR, Otd. Khim. Nauk., 3, 456 - 469, May - June 1954

Abstract : The results obtained from the study of the individual hydrocarbon composition of gasoline with end point of 150°, derived from low-sulfur Tuymazinsk petroleum (Devonian horizon), are described. The quantitative, individual hydrocarbon composition of Tuymazinsk gasoline and the general losses are presented in percentage by weight values. The structure of paraffin-base gasoline derived from Tuymazinsk petroleum and the aromatic contents of other hydrocarbons are discussed. Toluene and m-xylene were found to be predominant among aromatic hydrocarbons. Four USSR references. Tables, graphs.

Institution : Acad. of Sc. USSR, The P. N. Lebedev Physics Institute

Submitted : July 20, 1953

KAZANSKIY, B. A.

USSR/ Chemistry - Analytical chemistry

Card 1/2 Pub. 40 - 16/27

Authors : Kazanskiy, B. A.; Landsberg, G. S.; Plate, A. F.; Liberman, A. L.; Mikhaylova, E. A. Sterlin, Kh. E.; Bulanova, T. F.

Title : Aleksandrov, [illegible]
Determination of the individual hydrocarbon [illegible]

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1053-1056, Nov-Dec 1953

Abstract : The individual hydrocarbon composition of straight run gasolines [illegible]

Institution : Acad Sci USSR, The N. D. Zelinskiy Institute [illegible]

Submitted : December 19, 1953

Periodical : Izv. AN SSSR. Otd. khim. nauk 6, 1055-1066, Nov-Dec 1954

Card 2/2 Pub. 40 - 16/27

Abstract : The gasoline from the above mentioned source was fo[illegible] of aromatic hydrocarbons (16.3%). [illegible]

USSR

Additivity of refractional dispersion and comparative evaluation of dispersimetric methods for determination of aromatic hydrocarbons

KAZANSKY, B.A.

3188. On the paper by B. V. Ioffe: "Additivity of refraction dispersion and comparative evaluation of dispersometric methods of determining aromatic hydrocarbons." B. A. Kazansky, M. I. Rorengart, Sterligov and [illegible] Tarasova [illegible] USSR 1954 [illegible] 115-119 [illegible] 1954 1 3195 to the objections of Ioffe [illegible] 1954 1 paper by Kazansky [illegible] 1954 1 [illegible]

FD-1508

USSR/Chemistry - Catalysis

Card 1/1 : Pub. 129-11/18

Author : Kazanskiy, B. A. and Temkina, V. Ya.

Title : Hydrogenation of diphenylfulvene in the presence of nickel

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 6, 91-93, Sep 54

Abstract : The kinetic curve for the hydrogenation of diphenylfulvene over a skeletal nickel catalyst differs from that over a palladium catalyst. According to data from incomplete hydrogenation, the reaction proceeds just as selectively as over the palladium catalyst. Quadri-substituted ethylene, such as cyclopentylidenediphenylmethane, hydrogenates over skeletal nickel. Eight references (Six USSR)

Institution : Chair of Organic Catalysis

Submitted : January 25, 1954

KHCHNSKIY, B.M.

USSR/Chemistry - Fuels FD-1144

Card 1/1 Pub. 129-8/23

Author : Slovokhotova, T. A.; Sovalova, L. I.; Kazanskiy, B. A.; Balandin, A. A.

Title : Catalytic conversion of isomeric octanes with water over a nickel and kieselguhr catalyst

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 7, 65-72, Oct 1954

Abstract : Saturated hydrocarbons react with water over a nickel and kieselguhr catalyst forming products of gradual demethylation of the original hydrocarbon. The degree of conversion depends on the structure of the hydrocarbon. 2, 2, 4-Trimethylpentane reacts slower than the 2, 2, 3 isomer. Eight curves. Ten references (five USSR).

Institution : Chair of Organic Chemistry

Submitted : February 1, 1954

KHZANSKIY, B.A.

USSR/Scientific Organization - Conventions

Card 1/1 Pub. 124 - 13/26

Authors : Kazanskiy, B. A., Academician

Title : At the annual meeting of the French Physico-Chemical Society

Periodical : Vest. AN SSSR 10, 68-71, Oct 1954

Abstract : Report is made by the chief of the Soviet delegation attending the fourth annual meeting of the French Physico-Chemical Society in Paris, France, during June 8-11, 1954. The countries represented at this scientific session are listed. The delegations visited the French Petroleum Institute where they observed laboratory experiments on the desulfurization of petroleum products, dehydrogenation of isopropyl alcohol in liquid phase in the presence of Raney's nickle (catalyst), photochemical chlorination of hydrocarbons, etc.

Institution : Academy of Sciences USSR

Submitted : .....

KAZANSKIY, B.A.

USSR/Physics - Spectral analysis

Card 1/1 Pub. 43 - 34/62

Authors : Aleksanyan, V. T.; Lukina, M. Yu.; Sterin, Kh. Ye.; and Kazanskiy, B. A.

Title : Combined diffusion spectra of certain hydrocarbons of the cyclobutane series

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 699-702, Nov-Dec 1954

Abstract : The results obtained in studying the spectra of nine cyclobutane hydrocarbons are analyzed. An interpretation of the various frequencies and their forms (trans-cis, etc.) is given. Two references: 1 USA and 1 USSR (1943-1954). Table.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem. and the Commission on Spectroscopy

Submitted : .....

KAZANSKIY, B. A.

USSR/ Physics - Spectral analysis

Card 1/1 Pub. 43 - 36/62

Authors : Kazanskiy, B. A.; Landsberg, G. S.; Aleksanyan, V. T.; Bulanova, T. F.; Liberman, A. L.; Mikhaylova, Ye. A.; Plate, A. F.; Sterin, Kh. Ye.; and Ukholin, S. A.

Title : Analysis of aromatic ligroin parts by the combined diffusion spectra

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 704-706, Nov-Dec 1954

Abstract : Brief report is presented on the method and some results obtained during individual and close-group analysis of primary and secondary aromatics of ligroin. Analysis of results obtained showed that the basic ligroin (taken from the Embensk Petroleum Source) contained alkyl substitutes of benzene and cyclohexane with short term substituting radicals. Three references: 1 USA and 2 USSR (1947-1953). Tables.

Institution : Acad. of Sc., USSR., The N. D. Zelinskiy Inst. of Organ. Chem. and the Commission on Spectroscopy

Submitted : .....

Chemistry Catalytic conversions

Card : 1/1 Pub. 151 - 14/33

Authors : Khromov, S. I., Balenkova, E. S., Akishin, P. A., and Kazanskiy, B. A.

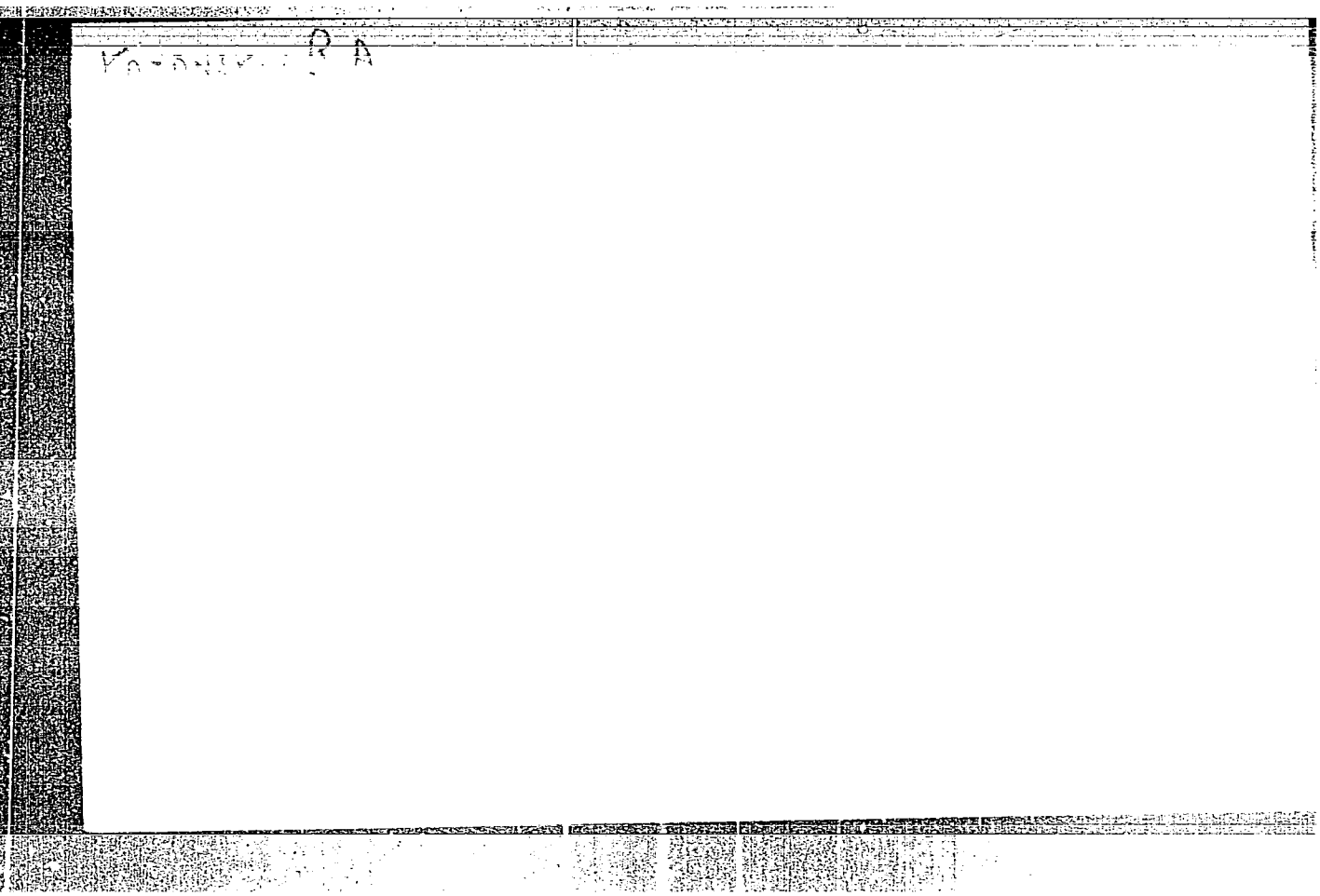
Title : Contact conversions of propylcycloheptane in the presence of a platinized carbon

Periodical : Zhur. ob. khim. 24/8, 1360 - 1364, August 1954

Abstract : Contact conversions of propylcycloheptane were investigated in the presence of platinized carbon at 320°. It was established that such contact conversion reactions take place with the formation of large quantities of 1-methyl-1-propylcyclohexane and some aromatic hydrocarbons (toluene, propylbenzene, butylbenzene, o-, m- and p-methyl propyl benzenes). The approximate ratio of hydrocarbons in the total catalysate mass of contact conversion of propylcycloheptane, is described. Seven references: 6 USSR and 1 USA (1937 - 1954). Tables.

Institution : State University, Moscow

Submitted : March 6, 1954



KAZANSKIY, B.A.

USSR/Chemistry - Catalytic conversion

Card 1/1 : Pub. 151 - 15/42

Authors : Khromov, S. I.; Balenkova, E. S.; and Kazanskiy, B. A.

Title : Contact conversions of butylcycloheptane in the presence of platinized C.

Periodical : Zhur. ob. khim. 24/9, 1562-1566, Sep 1954

Abstract : The behavior of butylcyclopentane in conditions of dehydrogenating catalysis was investigated. Contact conversion of butylcyclopentane over platinized carbon was studied at 320°. It was established that such contact conversions result in the formation of large quantities of 1-methyl-1-butylcyclohexane and aromatic hydrocarbon mixtures consisting of toluene, butylbenzene, o-, m- and p-methylbutylbenzenes, the fractional composition of which are shown in tables. Four references: 3-USSR and 1-USA (1937-1954).

Institution : State University, Moscow

Submitted : March 6, 1954

KAZANSKIY, B. A.

AID P - 206

Subject	:	USSR/Engineering
Card	:	1/1
Authors	:	Landsberg, G. S. and Kazanskiy, B. A.
Title	:	Comments on "The Soviet Atlas of Spectra of Composed Disperaion of Hydrocarbons" of M. D. Telicheyev (No. 8, 1953)
Periodical	:	Neft. khoz., v. 32, #3, 31-36, Mr 1954
Abstract	:	The authors of these comments replied to Telicheyev's criticism of the work conducted from 1941 to 1950 in the laboratories of various scientific institutions on the spectra of composed dispersion of hydrocarbons. The precision of determination of purity of hydrocarbons with the evaporation and freezing points is analysed. 11 Russian references (1941-53).
Institutions	:	Optical Laboratory of Physical Inst. im. P. N. Lebedev; The Laboratory of Catalytical synthesis of Inst. of Organic Chemistry im. N. D. Zelinskiy, Ac. of Sci., USSR; and the Laboratory of Organic Chemistry of Moscow University.
Submitted	:	No date

KAZANSKIY, B.A.

62

1

Synthesis of 1,2-dimethylcyclobutane. B. A. Kazanskii and M. Yu. Lukina (N. D. Zelinskii Inst. Org. Chem. Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.R.* 94, 887–9(1954).—Hydrolysis of di-Et 1-methylcyclobutane-2,2-dicarboxylate gave 80.5% *1-methylcyclobutane-2-carboxylic acid*, b_{12-6} 199–203°, n_D^{20} 1.4402, d_{20} 1.0112. The acid chloride with $PhNH_2$ gave the *anilide*, m. 128.5–9.0° (from dil. EtOH). Passage of the mixt. of the acid and HCO_2H over MnO at 315° gave 59.8% *1-methylcyclobutane-2-carboxyaldehyde*, b_{743-4} 122–6°, n_D^{20} 1.4298, d_{20} 0.8934; *semicarbazone*, m. 124.3–4.5°. Reduction of the hydrazone of the aldehyde according to Kishner's method gave 10.6% *1,2-dimethylcyclobutane*. The *trans isomer*, b_{760} 56.4–6.9°, n_D^{20} 1.3893, d_{20} 0.7029, f.p. −122.5°, aniline point 52.0°, was sepd. by distn. The higher boiling fractions contained varying proportions of the *cis isomer*; these comprised only a small fraction of the total yield. The cis form is estd. to boil at 67–8°.

G. M. Kosolapoff

KAZANSKIY, B. A.

KAZANSKIY, B.A USSR.

Catalytic cyclization of isooctane with formation of a five-membered ring. B. A. Kazanskii, A. L. Liberman, V. T. Aleksanyan, and Kh. E. Sterin (Inst. Org. Chem., Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 95, 281–3 (1954); *cf. ibid.* 77–80.—Isooctane (34 g.) passed over 20% Pt-C at 310° yielded a catalyzate which was freed from the aromatic content with silica gel. The aromatic portion consisted of 15% MePh, 35% *p*-xylene, and 50% *m*-xylene. Refractometry showed that the residue contained some 30% cyclic hydrocarbons. Fractionation of the material gave about 5.0 g. 1,1,3-trimethylcyclopentane, identified by the Raman spectrum (cm.$^{-1}$). Traces of 1,1-dimethylcyclohexane were detected by the presence of Raman line 709 cm.$^{-1}$. G. M. Kosolapoff

KAZANSKIY, B.A.

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Contact transformations of 1-methyl-1-ethylcyclohexane in the presence of platinized carbon. S. I. Khromov, E. S. Balenkova, and B. A. Kazanskii (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 96, 95-7 (1954).—Passage of 1-methyl-1-ethylcyclohexane over Pt-C at 320° gave 37% MePh, 43% EtPh, 13% *o*-xylene and 7% *o*-xylene. No $MeEtC_6H_4$ was found. G. M. K.

(2)

KAZANSKIY, B. A.

USSR/Chemistry

Card 1/1

Authors : Khromov, S. I., Balenkova, E. S., and Kazanskiy, B. A. Academician

Title : Contact conversions of 1-methyl-1-propylcyclohexane in the presence of platinized carbon

Periodical : Dokl. AN SSSR, 96, Ed. 2, 295 - 297, May 1954

Abstract : Synthesized hydrocarbon 1-methyl-1-propylcyclohexane was contacted at 320° with a 10%-platinized carbon, as a result an aromatic hydrocarbon and immutable basic hydrocarbon mixture was obtained. The aromatic hydrocarbons separated through chromatographic adsorption over silica gel were subjected to thorough fractionation over a column with an effectiveness of 40 theoretical plates. It was established that the trend of the contact conversion processes for 1-methyl-1-propylcyclohexane is the same as in the conversion of 1-methyl-1-ethylcyclohexane. Four USSR references, since 1937. Tables, Graphs.

Institution : The M. V. Lomonosov State University, N. D. Zelinskiy Laboratory of Organic Chemistry, Moscow.

Submitted : February 26, 1954

KAZANSKIY, B. A.

USSR/Chemistry

Card : 1/1

Authors : Gavrilova, A. E., Gonikberg, M. G., Plate, A. F., and Kazanskiy, B. A. Academ.

Title : Thermal decomposition of methylcyclopentane at high hydrogen pressures

Periodical : Dokl. AN SSSR, 96, Ed. 5, 987 - 990, June 1954

Abstract : It was established experimentally that an increased hydrogen pressure results in noticeable reduction in the rate of decomposition of methylcyclopentane and increases the yield of liquid reaction products and unconverted methylcyclopentane. The fraction of cyclopentane in methylcyclopentane conversion products increases in proportion to the increase in hydrogen pressure. An increase in hydrogen pressure decreases the yield of the radical with boiling point of over 60° (to 7 - 10%) after which it remains practically unchanged. Ten references. Tables, graphs.

Institution : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organic Chemistry

Submitted : April 14, 1954

KAZANSKIY, B. A.

USSR/Chemistry Catalysis

Card : 1/1

Authors : Khromov, S. I., Balenkova, E. S., Akishin, P. A. and Kazanskiy, B. A., Academ.

Title : Contact conversions of 1-methyl-1-butylcyclohexane in the presence of platinum coated carbon

Periodical : Dokl. AN SSSR, 97, Ed. 1, 103 - 106, July 1954

Abstract : Formula is given showing the trend of the chemical reaction leading to the conversion of 1-methyl-1-butylcyclohexane over a platinum coated carbon catalyst. The formation of naphthalin during contact conversions of such hydrocarbons is explained by the secondary chemical conversions occurring during the catalysis of butyl benzone. The approximate ratio of aromatic hydrocarbons found in the catalysate obtained from contact conversion of 1-methyl-1-butylcyclohexane, is described. Five references: 4 USSR, 1 USA. Tables, graph.

Institution : The M. V. Lomonosov State University, The N. D. Zelinskiy Lab. of Org. Chem., Moscow.

Submitted : April 27, 1954

KAZANSKII, B. A.

USSR/ Chemistry - Catalysis

Card 1/1 : Pub. 22 - 29/46

Authors : Lukina, M. Yu; Ovodova, V. A.; and Kazanskiy, B. A., Academician

Title : Catalytic hydrogenolysis of ethylcyclopropane and methylcyclobutane

Periodical : Dok. AN SSSR 97/4, 683-686, Aug 1, 1954

Abstract : Cyclopentane, methylcyclobutane and ethylcyclopropane were subjected to catalytic hydrogenation for the purpose of comparing the easiness of hydrogenolysis of three-, four- and five-membered hydrocarbon cycles. The break in the C-C bond for the three hydrocarbons was established at temperatures ranging from 50 to 250°. The trend in the rupture of the C-C bonds is distinguished by specific characteristics, which are explained in chemical formulas. Nineteen references: 10-USSR, 6-USA; 1-German; 1-English and 1-Dutch (1907-1953). Tables.

Institution : ....

Submitted : June 10, 1954

MARKOVNIKOV, V.V.; PLATE, A.F., doktor khimicheskikh nauk, redaktor; BYKOV, G.V., kandidat khimicheskikh nauk, redaktor; PETROVSKIY, I.B., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; ANDREYEV, N.N. akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor KOSHTOYANTS, Kh. S., redaktor; SAMARIN, A.M., redaktor, LEBEDEV, D.M.. professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor; KUZNETSOV, I.V., kandidat filologicheskikh nauk, redaktor; STERLIGOV, O.D., redaktor; ZEMLYAKOVA, T.A., tekhnicheskiy redaktor

[Selected works] Izbrannye trudy. Redaktsiia, stat'i i primechaniia A.F. Plate i G.V. Bykova, Moskva, Izd-vo Akademii nauk SSSR 1955. 926 p. (MLRA 8:10)

1. Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin) (Chemistry) (Markovnikov, Vladimir Vasil'evich 1837-1904)

KAZANSKIY, B.A.

ZELINSKIY, Nikolay Dmitriyevich, 1861-1953 [deceased] KAZANSKIY, B.A., akademik; BALANDIN, A.A., akademik; KOCHESHKOV, K.A.; SHUYKIN, N.I.; KAVERZNEVA, Ye.D, doktor khimicheskikh nauk; LEVINA, R.Ya., doktor khimicheskikh nauk; PLATE, A.F., doktor khimicheskikh nauk; RUBINSHTEYN, A.M., doktor khimicheskikh nauk; YUR'YEV, Yu.K., doktor khimicheskikh nauk; KISELEVA, A.A., tekhnicheskiy redaktor.

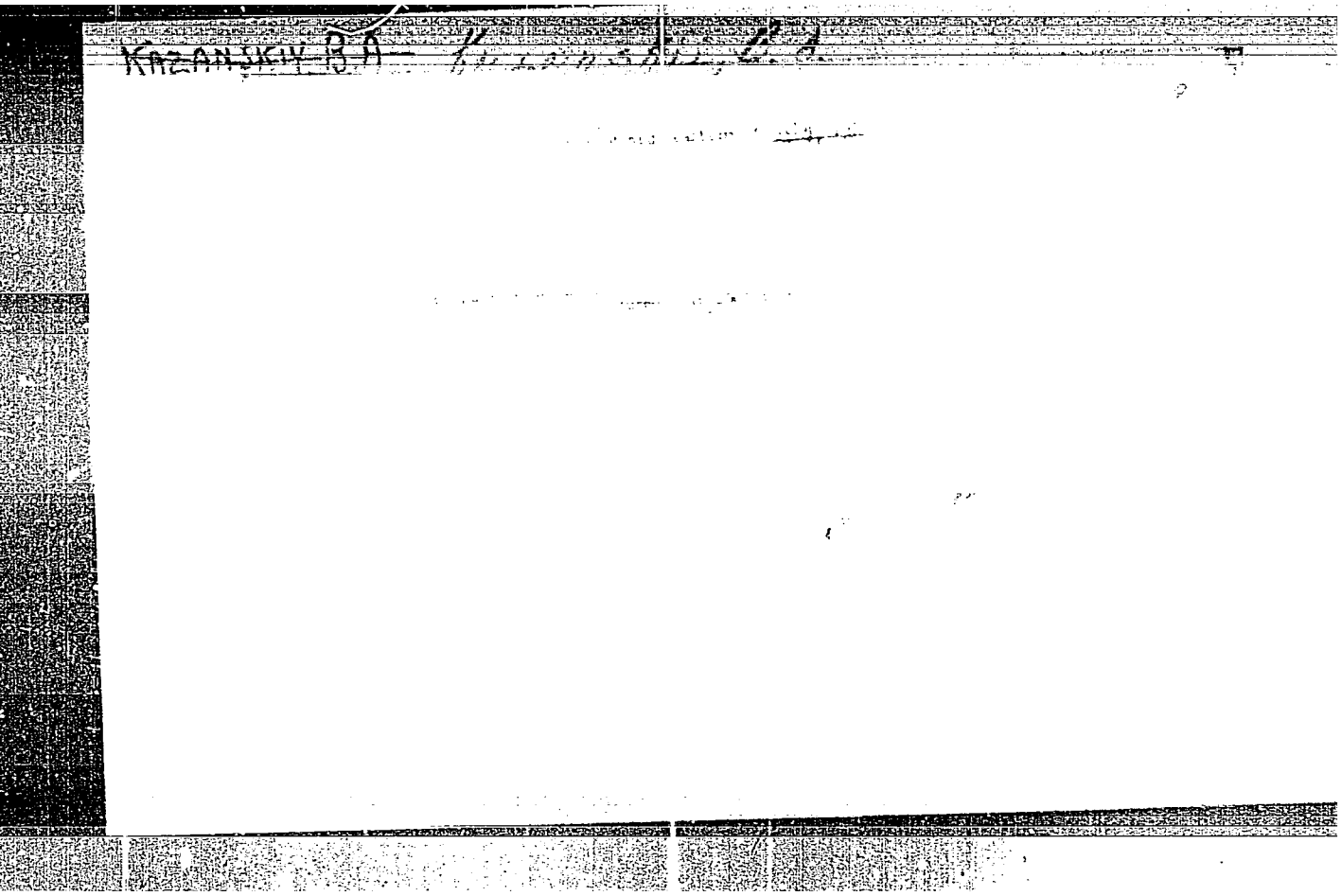
[Collected works] Sobranie trudov, Moskva, Izd-vo Akademii nauk SSSR. Vol. 2. 1955. 743 p. (MLRA 8:11)

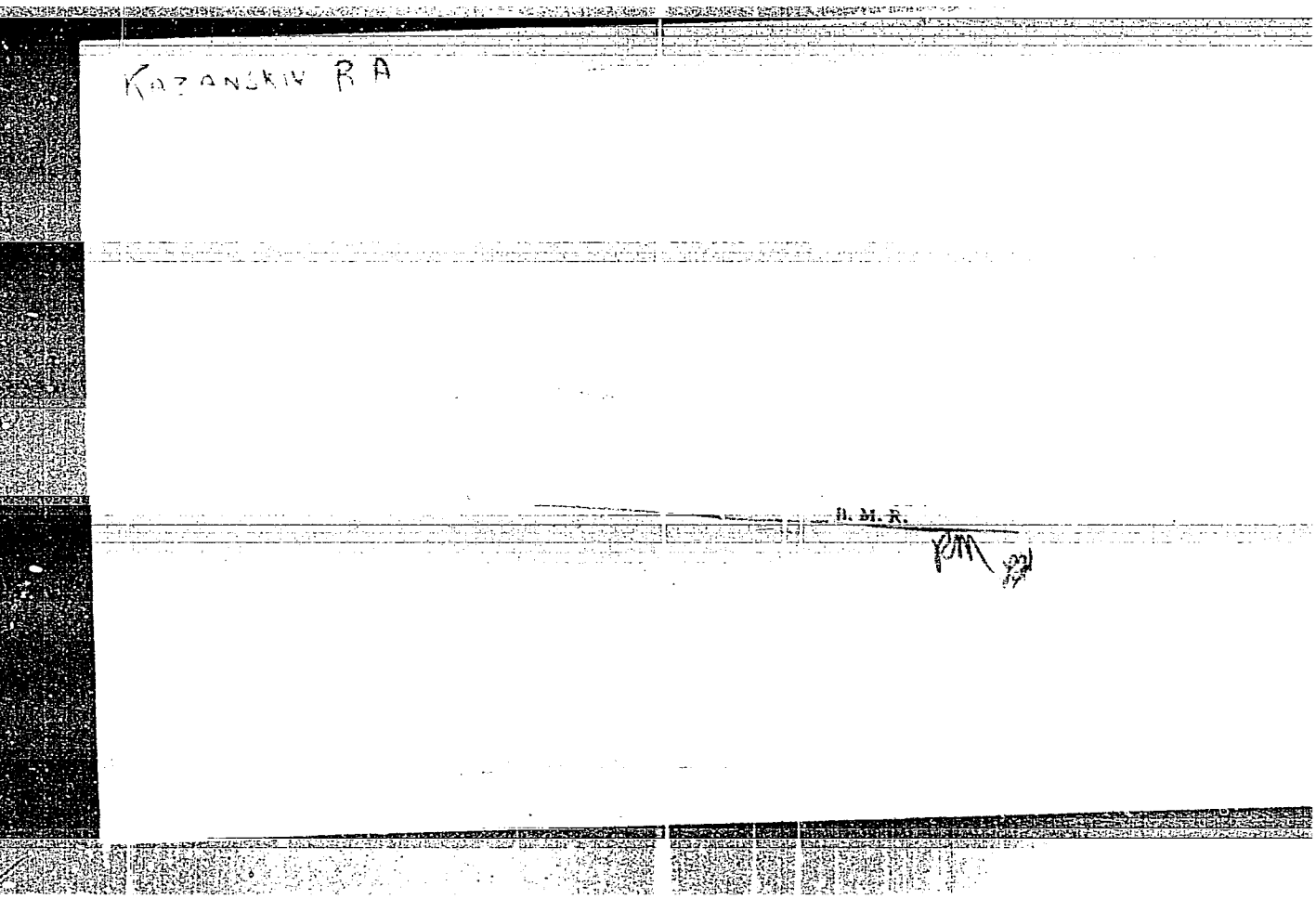
1. Chlen-korrespondent AN SSSR(for Kocheshkov and Shuykin)
(Hydrocarbons) (Petroleum)

ZELINSKIY, N.D.; KAZANSKIY, B.A., akademik; BALANDIN, A.A., akademik; KOCHESHKOV, K.A.; SHUYKIN, N.I.: KAVERZNEVA, Ye.D., doktor khimicheskikh nauk; LEVINA, R.Ya., doktor; khimicheskikh nauk; PLATE, A.F.; doktor khimicheskikh nauk;RUBINSHTEYN, A.M. doktor khimicheskikh nauk; YUR'YEV, Yu.K., doktor khimicheskikh nauk.

[Collected works] Sobranie trudov. Moskva, Izd-vo Akad.nauk SSSR. Vol. 3 1955 719 p. (MLRA 8:8)

1. Chlen-korrespondenty AN SSSR (for Kocheshkov, Shuykin).





KAZANSKIY, B.A.

Chem

Thermal decomposition and destructive hydrogenation of hydrocarbons under high pressure of hydrogen. B. A. Kazanskii, M. G. Yaniberg, A. F. Plate, A. E. Gavrilova, and V. B. Nikitenkov (N. D. Zelinskii Inst. Org. Chem. Acad. Sci., Moscow). *Kataliticheskoe Gidrirovanie i Okislenie, Akad. Nauk Kazakh. S.S.R., Trudy Konf.* 1955, 121–34.—The previously reported results on hydrogenolysis of paraffins, methylcyclopentane and MePh are summarized; cf. *C.A.* 49, 8155i, 8825h. Possible mechanisms of the cleavage are discussed. G. M. Kosolapoff

Fuels

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10

RM 12

KAZANSKIY, B.A

M. A. YOUTZ
3 copies

Catalytic hydrogenation of doubly unsaturated compounds with conjugated system of double bonds. III. Hydrogenation of 2,3-dimethyl-1,3-butadiene in the presence of platinum, nickel and palladium. I. V. Gostunskaya, G. V. Loza, and B. A. Kazanskii (M. V. Lomonosov State Univ., Moscow). Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1955, 863-8; cf. C.A. 49, 4494b.—In the presence of Pt or Ni the hydrogenation of $(CMe{:}CH_2)_2$ occurs along all possible paths. Kinetic curves of the hydrogenations are shown. Only 1 expt. with Pd black is recorded; the curve is very similar to that obtained with Ni. The reaction over Ni yields but 25% of the product of 1,4-addn., while isoprene yields 40% of such an adduct. Over Pt, isoprene and $(CMe{:}CH_2)_2$ give comparable dispersions of the possible products. G. M. Kosolapoff

Chem

RM

KAZANSKIY, B. A.

Chem

5

Isomerization of ethylcyclopropane on silica gel under conditions of chromatographic analysis. B. A. Kazanskii, V. T. Aleksanyan, M. Yu. Lukina, A. I. Malyshev, and Kh. E. Sterin (N. D. Zelinskii Inst. Org. Chem., Acad. Sci., Moscow). Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1955, 1118-19.—Passage of carefully purified ethylcyclopropane through a column with silica gel at 1.7° (cooling jacket) gave a product which instantly decolorized Br water and had a Raman spectrum indicative of the presence of 68% starting material, 12% cis-2-pentene, 17% trans-2-pentene and 3% 1-pentene. G. M. Kosolapoff

(Clipped Abstract)

RM

KAZANSKIY, B.A.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of solid mineral fuels I-12

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12869

Author : Kazanskiy B.A., Gonikberg M.G., Lozovoy A.V., Gavrilova A.Ye., Blonskaya A.I.

Inst : Institute of Mineral Fuels of the Academy of Sciences USSR

Title : Investigation of Hydrogenation of Coal at Hydrogen Pressure Above 1000 Atm.

Orig Pub : Tr. In-ta goryuchikh iskopayemykh AN SSSR, 1955, 6, 3-15

Abstract : Investigation, under laboratory conditions, of the hydrogenation of coal at 420° and pressure of 300-1700 atmospheres, with and without an Fe catalyst. It is shown that under the given conditions, the Fe catalyst has no effect on the hydrogenation process. Increase in pressure from 300-400 to 1200-1500 atmospheres doubles the total yield of gasoline and middle oil fraction,

Card 1/2 - 223 -

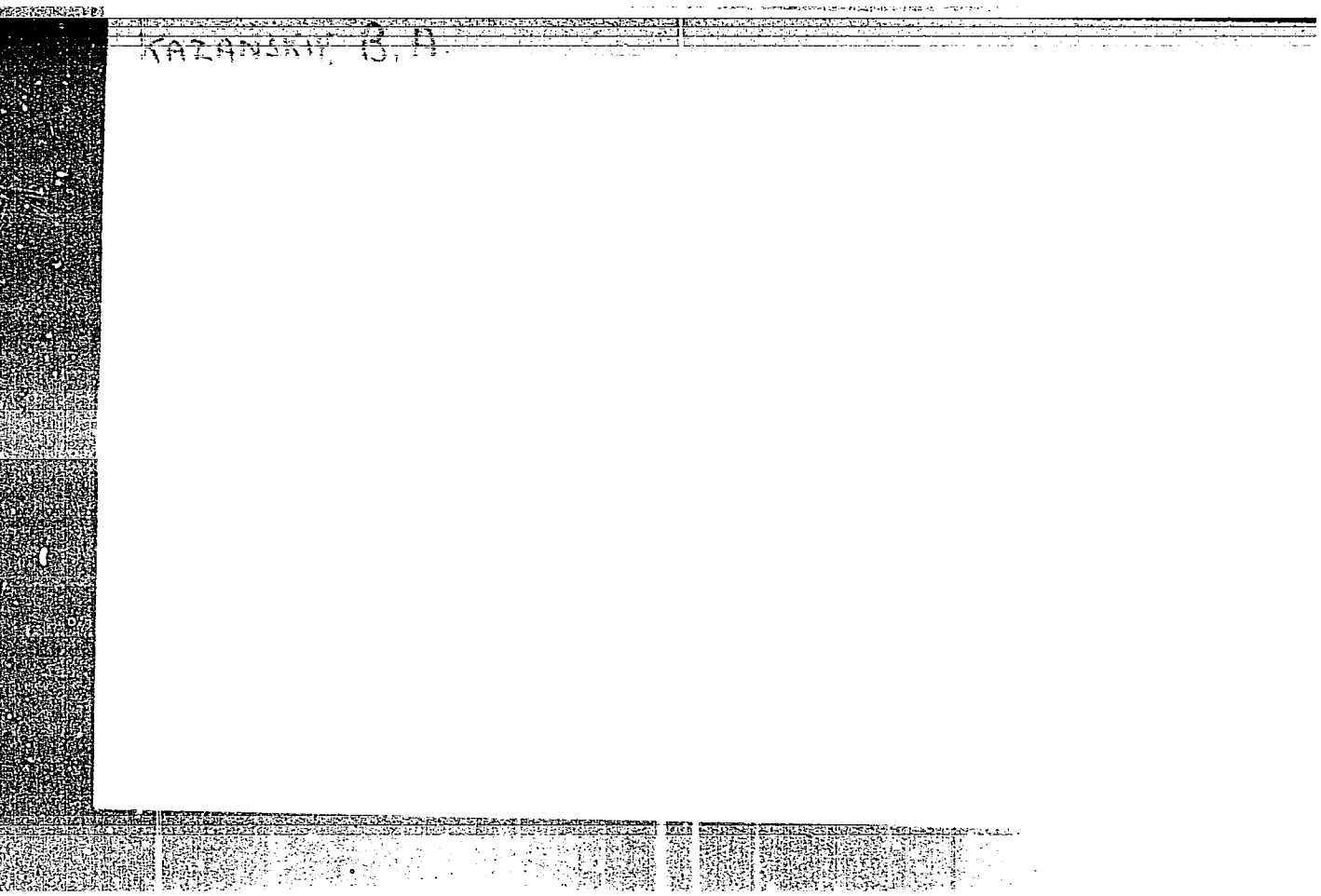
KAZANSKIY,B.A.; LEVINA,R.Ya.; YUR'YEV,Yu.K.

The chemistry of hydrocarbons and heterocyclic compounds in the works of N.D.Zelinskii and his school. Vest. Mosk. un. 10 no.45:145-167 Ap-My '55. (MLRA 8:8)
(Hydrocarbons) (Zelinskii, Nikolai Dmitrievich, 1861-1953)

ALEKSANYAN, V.T.; STERIN, Kh.Ye.; LIBERMAN, A.L.; MIKHAYLOVA, Ye.A.
PRYANISHNIKOVA, M.A.; KAZANSKIY, B.A.

Report no.8. Raman spectra of a few aromatic hydrocarbons.
Izv.AN SSSR.Ser.fiz.19 no.2:225-233 Mr-Ap '55. (MLRA 9:1)

1.Komissiya po spektroskopii i Institut organicheskoy khimii
imeni N.D.Zelinskogo Akademii nauk SSSR.
(Tartu--Spectrum analysis--Congresses)



KAZANSKIY, B. A.

7

Dienes formed in dehydration of 3,4-dimethyl-3,4-hexanediol. T. V. Gostunskaya, E. A. Krasil'nikova, and B. A. Kazanskii (Moscow State Univ.). *Zhur. Obshchei Khim.* 25, 1448–53(1955).—MeEtCO (0.7 mole) and 0.07 mole $HgCl_2$ in 160 ml. C_6H_6 were added gradually to 1 g.-at. Mg and after the reaction had commenced the mixt. was treated with 1.4 moles MeEtCO in 80 ml. C_6H_6; after spontaneous boiling for 1 hr. the mixt. was dild. with 120 ml. C_6H_6 and refluxed 2 hrs. Treatment with hot H_2O, sepn. of $Mg(OH)_2$ and extn. with C_6H_6 gave after distn. of the org. layer 30–2% *3,4-dimethyl-3,4-hexanediol*, b_3 98–100°, m. 40–7°; pure product, b_{20} 119°. This (0.36 mole) and 3 drops 20% H_2SO_4 were heated gradually to 180° with distn. of H_2O and hydrocarbons; redistn. yielded a range of products, b_{760} 111.3–152.7°. If the diol was treated 4 parts Ac_2O and a little H_3PO_4 was heated slowly to 100–70° there resulted an 86% yield of hydrocarbons, b. 108.5–136.8°. Fractionation of all the collected hydrocarbons yielded 3 distinct substances (cf. Macallum and Whitby, *C.A.* 22, 2080): *3,4-dimethyl-2,4-hexadiene* (I), b_{760} 114.4–14.8°, n_D^{20} 1.4410, d_{20} 0.7540; *2,3-diethyl-1,3-butadiene* (II), b_{760} 120.3°, n_D^{20} 1.4610, d_{20} 0.7760; and *3-methyl-2-ethyl-1,3-pentadiene* (III), b_{760} 130.3°, n_D^{20} 1.4760, d_{20} 0.7018. I forms a *maleic anhydride adduct*, b_3 148–50°, m. 46–7°, which distd. with P_2O_5 gave 1,2,3,4-tetramethylbenzene. II yields a *maleic anhydride adduct*, m. 59°, which distd. with P_2O_5 gave 1,2-$Et_2C_6H_4$. III gave a *maleic anhydride adduct*, m. 104°, which heated with P_2O_5 gave 1,2-dimethyl-3-ethylbenzene. All 3 add 2 moles of H. III is formed in the greatest yields among the 3 dienes.

G. M. Kosolapoff

KAZANSKIY, B.A.

KAZANSKIY, B.A.; GOSTUNSKAYA, I.V.

Addition of hydrogen to an isolated double bond effected by calcium hexaammoniate. Zhur.ob.khim. 25 no.9:1704-1711 S '55. (MLRA 9:2)

1.Moskovskiy gosudarstvennyy universitet.
(Hydrocarbons) (Ammines) (Hydrogenation)

KAZANSKIY, B. A.

Isomerization of unsaturated hydrocarbons with calcium amide. I. V. Gostunskaya and B. A. Kazanskii. *J. Gen. Chem. U.S.S.R.* 25, 1943-7(1955)(Engl. translation).—See *C. A.* 50, 8137h. B. M. K.

2

GOSTUNSKAYA, I.V.; KAZANSKIY, B.A.

Isomerization of unsaturated hydrocarbons effected by calcium amide. Zhur. ob. khim. 25 no.10:1995-2001 S '55. (MLRA 9:2)

1.Moskovskiy gosudarstvennyy universitet.
(Compounds, Unsaturated) (Isomers and isomerization)

KAZANSKIY, B.A.; ALEKSANYAN, V.T.; LUKINA, M.Yu; MALYSHEV, A.I.; STERIN, Kh.Ye.

Isomerization of ethylcyclopropane on silica gel under the conditions of adsorption chromatographic analysis. Izv.AN SSSR.Otd.khim.nauk 86 no.6:1118-1119 My '55. (MIRA 9:4)

1.Institut organicheskoy khimii imeni.N.D.Zelinskogo Akademii nauk SSSR.
(Cyclopropane) (Chromatographic analysis)

KAZANSKIY, B.A.

USSR/ Chemistry - Organic chemistry

Card 1/1 Pub. 22 - 26/52

Authors : Kazanskiy, B. A. Academician; Lukina, M. Yu; Nakhapetyan, L. A.

Title : Dehydration of dimethylcyclobutylcarbinol

Periodical : Dok. AN SSSR 101/4, 683-686, Apr 1, 1955

Abstract : Experimental data are presented on the derivation of two olefine hydrocarbons, with four-membered ring, through the dehydration of dimethylcyclobutylcarbinol in heated state and the addition of concentrated H_2SO_4. The entire dehydration-synthesis process and the hydrocarbon yields obtained are described. The results obtained were compared with those of other previous attempts to synthesize four-membered olefines and the findings are listed. Ten references: 5 Russian and Soviet; 4 USA and 1 Belgian (1905-1953). Diagram.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : December 8, 1954

KAZANSKIY, B.A.

USSR/Chemistry - Organic chemistry

Card 1/1 Pub. 22 - 24/51

Authors : Kazanskiy, B. A., Academician, and Liberman, A. L.

Title : About stereoisomeric 1-methyl-4-ethylcyclohexanes

Periodical : Dok. AN SSSR 101/5, 877-880, Apr 11, 1955

Abstract : The experimental synthesis of 1-methyl-4-ethylcyclohexane and the splitting of same into stereoisomers through accurate rectification are described. Measures were taken during each phase of the synthesis to obtain possibly pure intermediate substances even at the expense of reducing the total yield of the hexane. It was found that an increase in molecular weight of the stereoisomers was always followed by an approximation of their boiling points, indices of refraction and specific weights. The physico-chemical properties of stereoisomeric 1-methyl-4-ethylcyclohexanes are described. Eighteen references: 7 USSR, 6 USA, 2 English, 2 German and 1 French (1922-1954). Tables; graph.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : December 27, 1954

KAZANSKIY, B. A.

8

Reduction of unsymmetrical ciene hydrocarbons with calcium hexaammoniate. B. A. Kazanskii, I. V. Gostunskaya, E. A. Davankova, and E. G. Treshchova (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 105, 485-8(1955); cf. C.A. 50, 5540b.--Dehydration of 3,4-dimethyl-3,4-hexanediol with H_3PO_4-Ac_2O gave 3-methyl-2-ethyl-1,3-pentadiene, b_{760} 136.3°, n_D^{20} 1.4760, d_4^{20} 0.7918. This (31.2 g.) was reduced with Ca hexaammoniate (from 40 g. Ca) yielding 23.5 g. mixed products identified as 3-methyl-2-ethyl-1-pentene, 3,4-dimethyl-2-hexene, and 3,4-dimethyl-3-hexene (13%, 52%, 35%, resp.). Reduction of 65.1 g. 2-methyl-2,4-hexadiene with Ca hexaammoniate (from 92 g. Ca) gave 53.7 g. products composed of 31% *trans*-2-methyl-3-hexene, 20% *trans*-4-methyl-2-hexene and 49% 2-methyl-1-hexene, identified by Raman spectra. The Raman spectrum of 2-methyl-2-hexene is (cm.$^{-1}$) 276(10), 325(3.5), 345(3), 378(3.5), 421-34(4.5), 463(6.5), 512(0.3), 547(0), 587(0), 736(4.0), 763(6.5), 789(8), 832(6), 869(21), 897(2), 981(0), 1040(14), 1072(22), 1089(26), 1117(0), 1144(10.5), 1170(12), 1196(11), 1240(9), 1268(4), 1296(9), 1320(14), 1339(20.5), 1353(12), 1382(51), 1437(65), 1458(71), 1674(126). G. M. Kosolapoff